



Major Hazard Management in Australian Coal Mining

Jim Joy
Professor and Director
Minerals Industry Safety and Health Centre
Sustainable Minerals Institute
The University of Queensland, Australia



Minerals Industry Safety & Health Centre (MISHC)

- established in 1998
- an initiative of Industry, Government and UQ
- recognition that engineering education has a critical role in improving S & H risk



MISHC Postgrad courses

**UQ Graduate
Certificate or
Diploma in
Risk Mgmt.**

4 or
all of

Risk Management (G3)

Human Factors

Risk Analysis

Sociology of Disasters

Incident Investigation
& Analysis

Mining OH&S

Special Projects I & II

Masters/ PhD

Since 1990

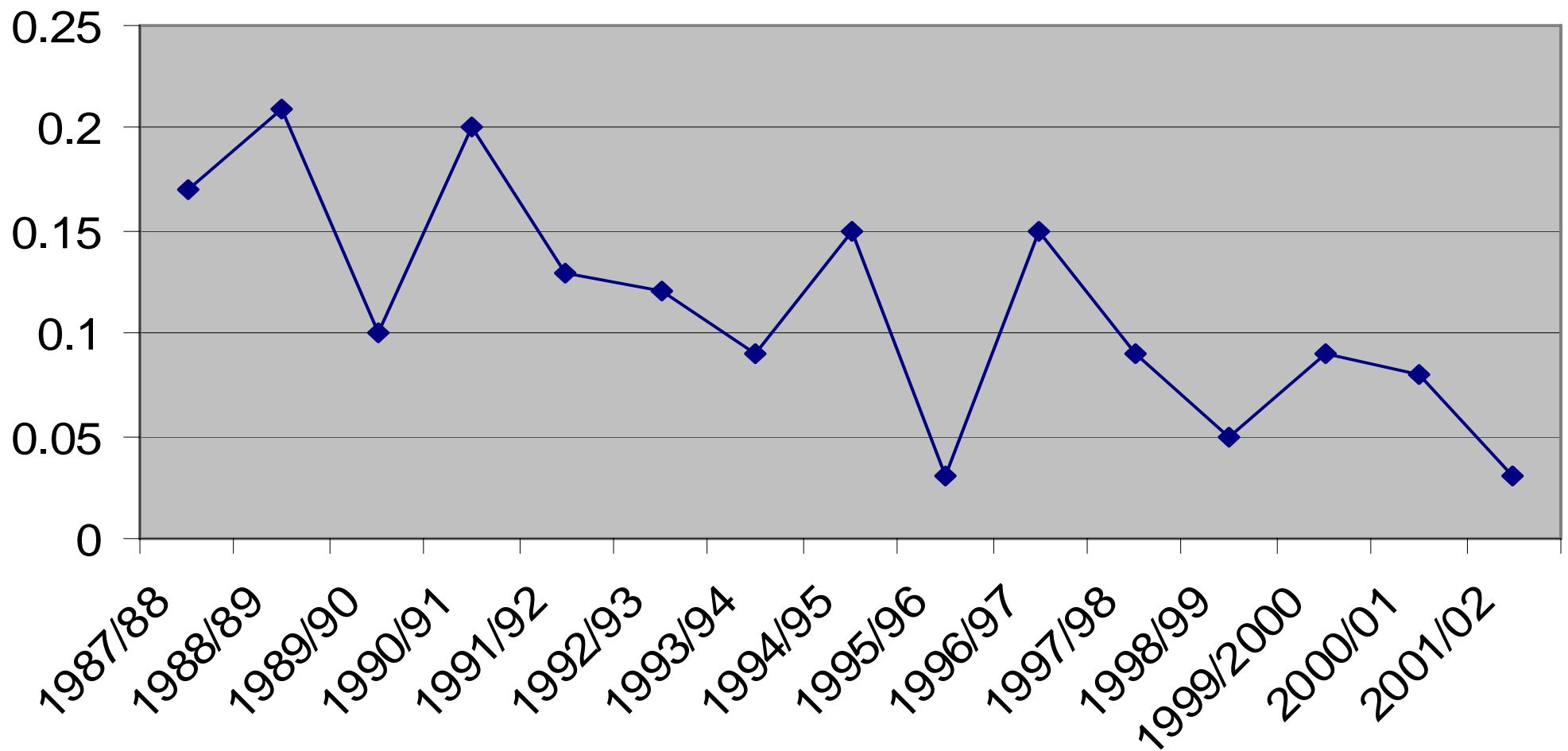
**Moura explosion
(11)**

Gretley Inrush (4)

**Northparkes
airblast (4)**

**Bronzewing fill
inrush (3)**

Australian Mining Industry Fatality Rate per Million Man Hours Exposure



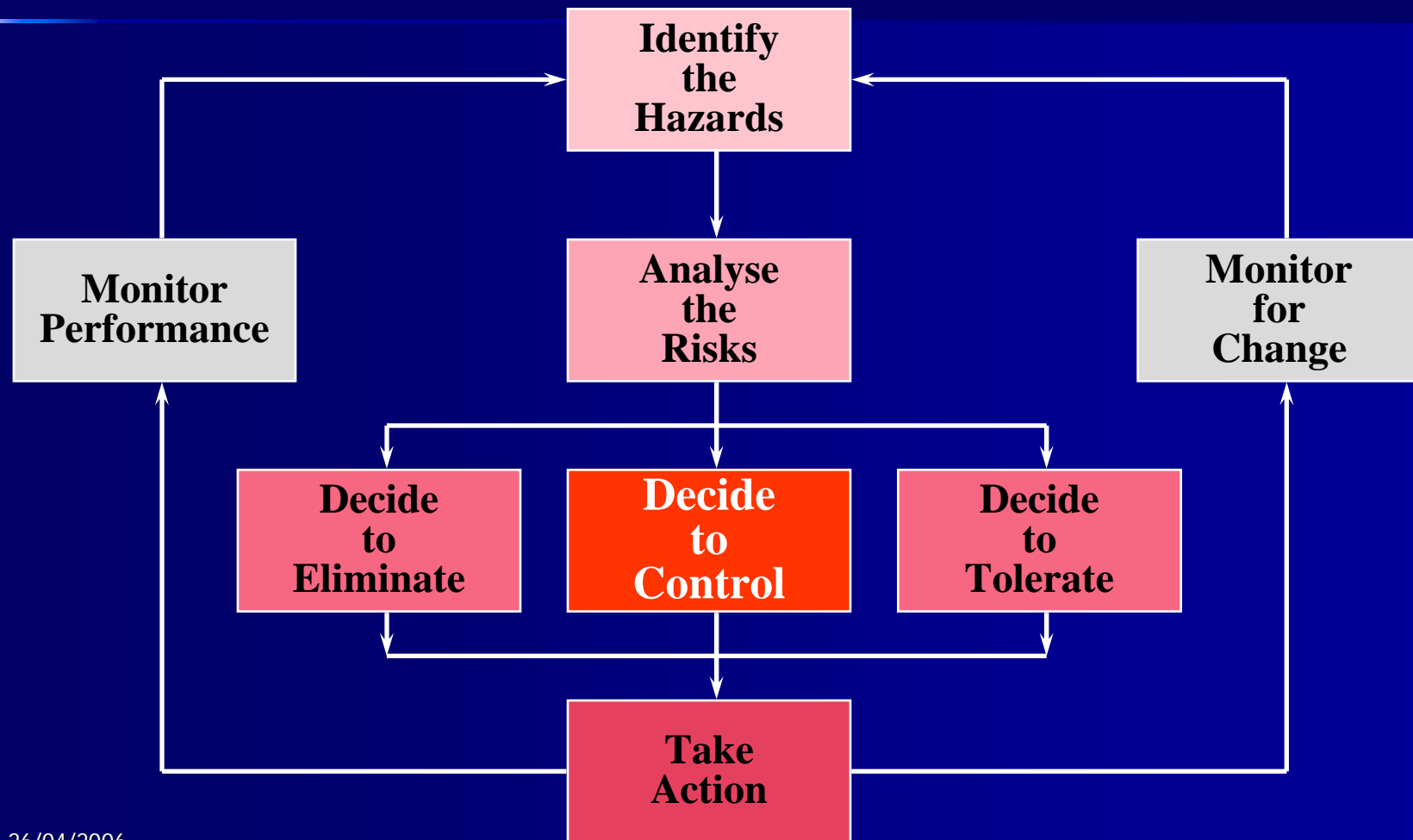
Mining Regulatory Approach



Regulatory Manifestations

1. **General principles of RA & RM**
2. **Major or Principal Management Plans**
3. **RM competency requirements**
4. **Use of RA as “approval” methodology**

Basic Risk Management System



Control Framework



Why use Major Hazard Management Planning?



- ✓ to manage potential multiple fatality events
- ✓ to do it more effectively and efficiently
- ✓ to meet regulatory requirements
- ✓ to improve business success

Major Hazards

Post Moura

- spon comb
- UG fire
- ventilation / gas
- ground control
- & others

New legislation additions

- Fixed & mobile mechanical
- Electricity
- Windblast

The MHM Process

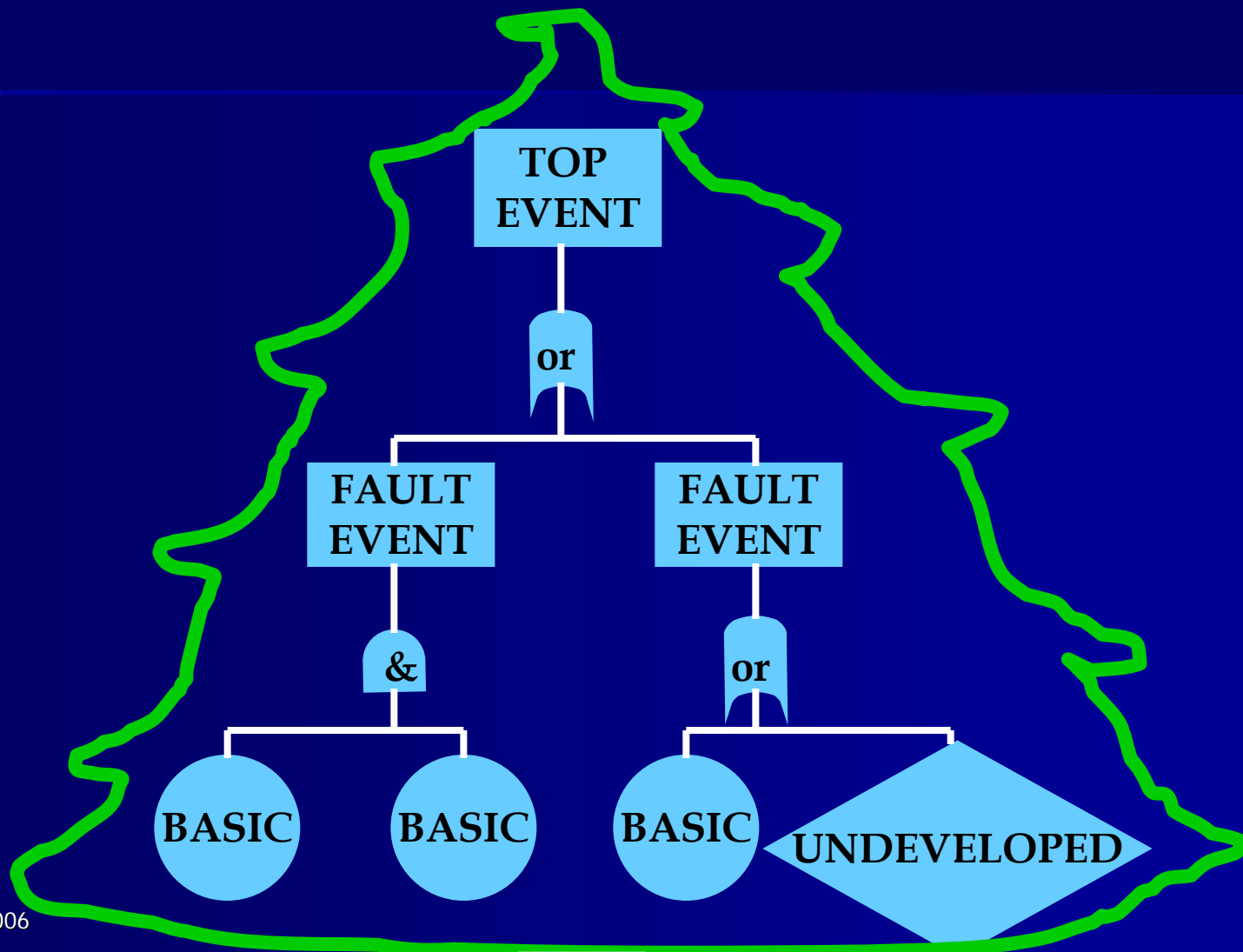
1. Identify the Major Hazards
2. Review the Hazard (location, risk, controls)
3. Determine important existing & new controls
4. Document (Action Plan, Standards, Accountabilities, etc.)
5. Implement
6. Monitor / Audit
7. Manage change

Reviewing the Major Hazard

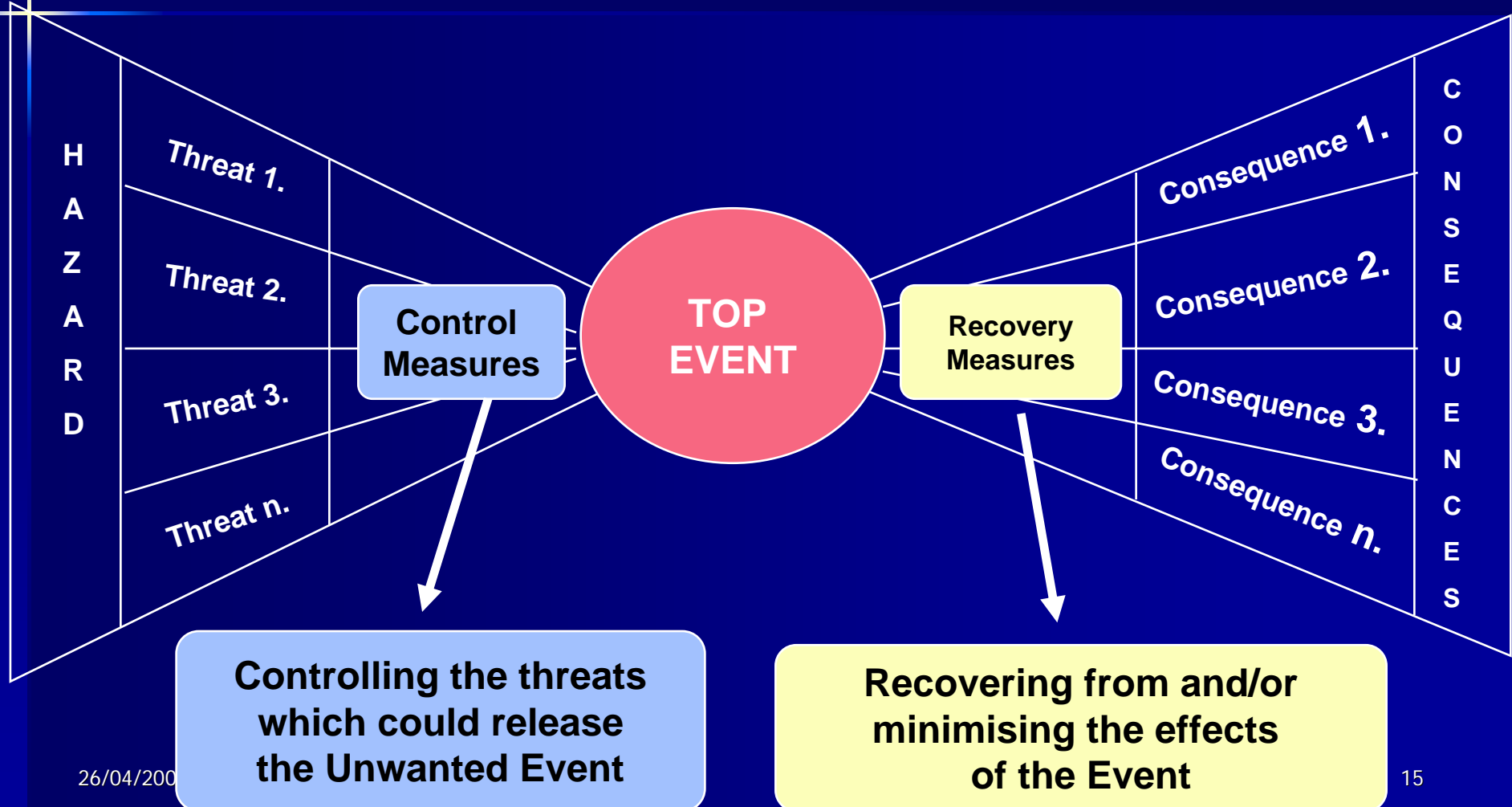
Risk Assessment

- ❑ Identification of the major hazards (nature, magnitude, locations)
- ❑ Detailed analysis of the major hazards

Fault Tree Analysis



BOW TIE ANALYSIS



Control Framework





Minerals Industry Cooperation Initiative (2003-06)



Goal:

**To improve industry RM,
as well as demonstrate
industry cooperation**

26/04/2006



MICI - 2003-06 "Hard" Projects

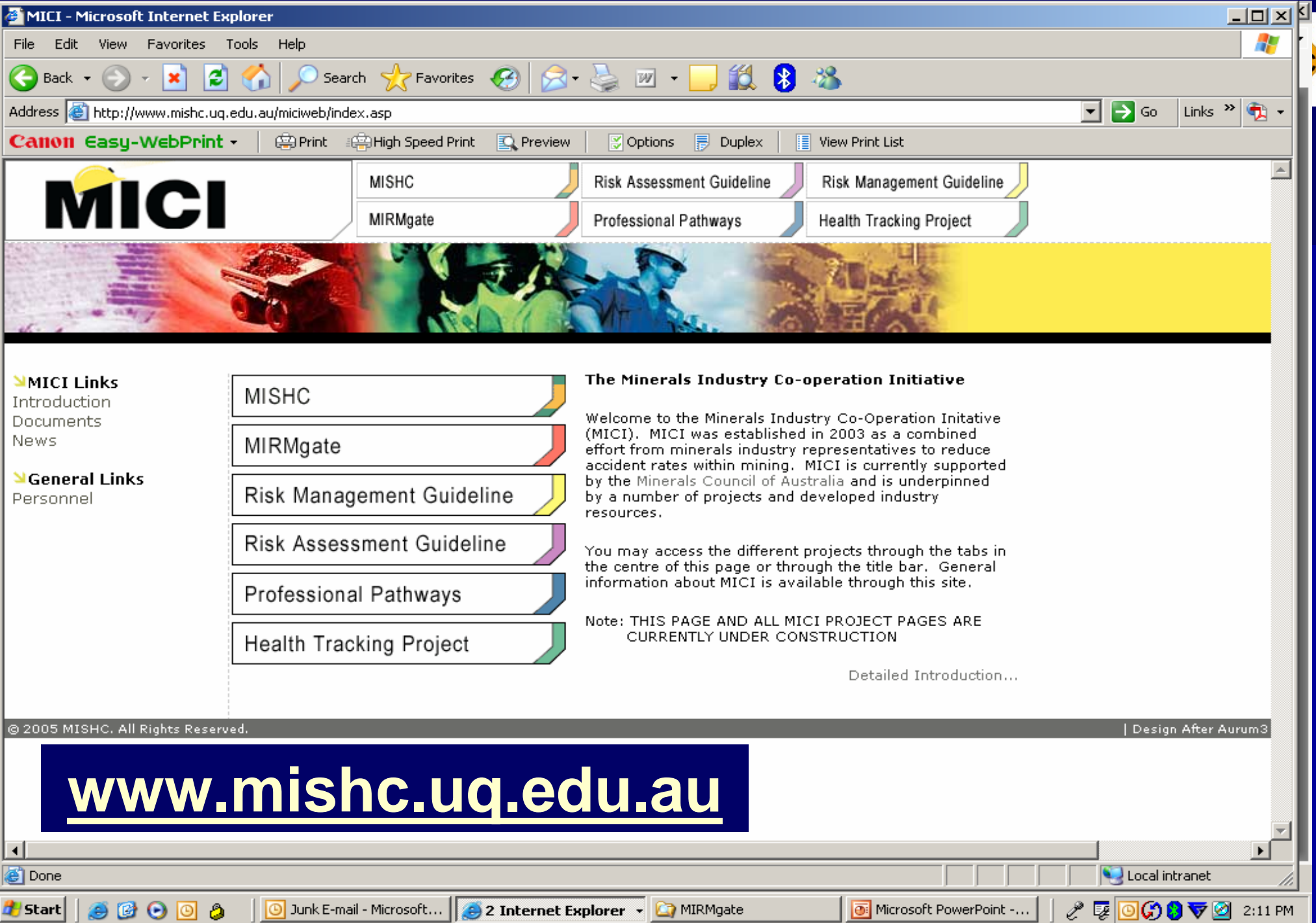
**MCA Risk
Guidelines**

**Professional
Pathways**

**MIRMgate -
Hazard Mgmt
Guidance**

**OH&S Perf.
Dbase**





Risk Management Guideline - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back

Search

Favorites

Address

http://www.mishc.uq.edu.au/rmg/index.asp

Go

Links

Canon Easy-WebPrint

Print

High Speed Print

Preview

Options

Duplex

View Print List

National Minerals Industry Risk Management Guidelines

MICI Home

MIRMgate

Risk Assessment Guidelines

Professional Pathways

MISHC

Health Tracking Project

RMG Links

Project Outline

Project Objectives

Risk Management Guideline

General Links

Contact Us

Feedback

Welcome to the Risk Management Guideline

THIS PAGE IS UNDER CONSTRUCTION

Vulnerable

Reactive

Compliant

Proactive

Resilient

Minerals Industry RM Ladder

© 2005 MISHC. All Rights Reserved.

Design After Aurum3

NATIONAL MINERALS INDUSTRY
SAFETY AND HEALTH
RISK MANAGEMENT GUIDELINE
2006

Done

Local intranet

Start

4 Micro...

2 Micro...

2 Wind...

Window...

AMICI p...

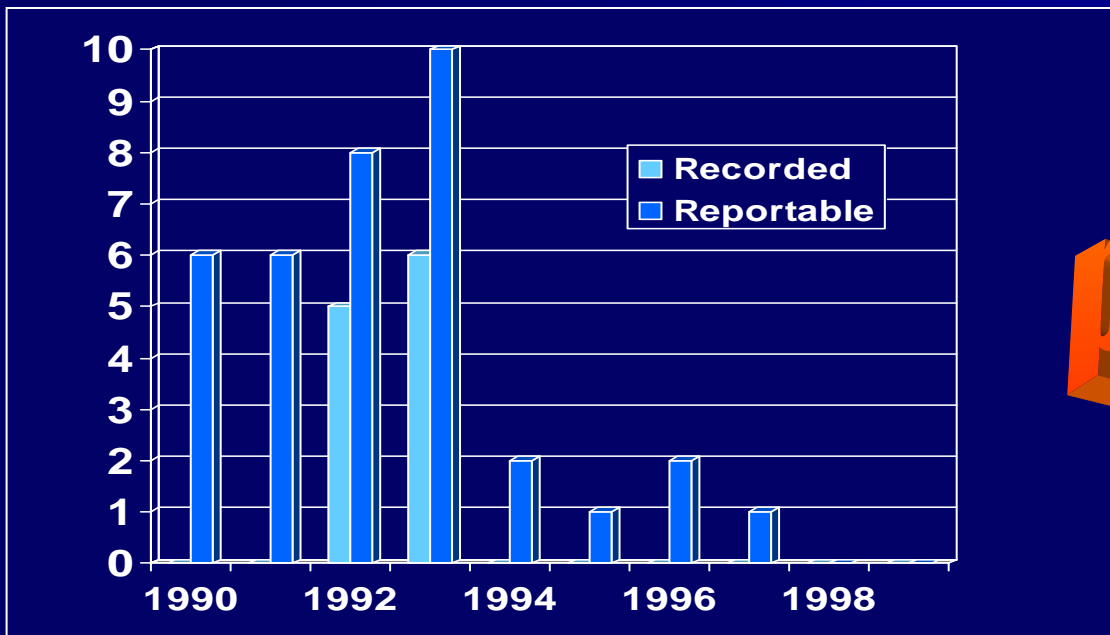
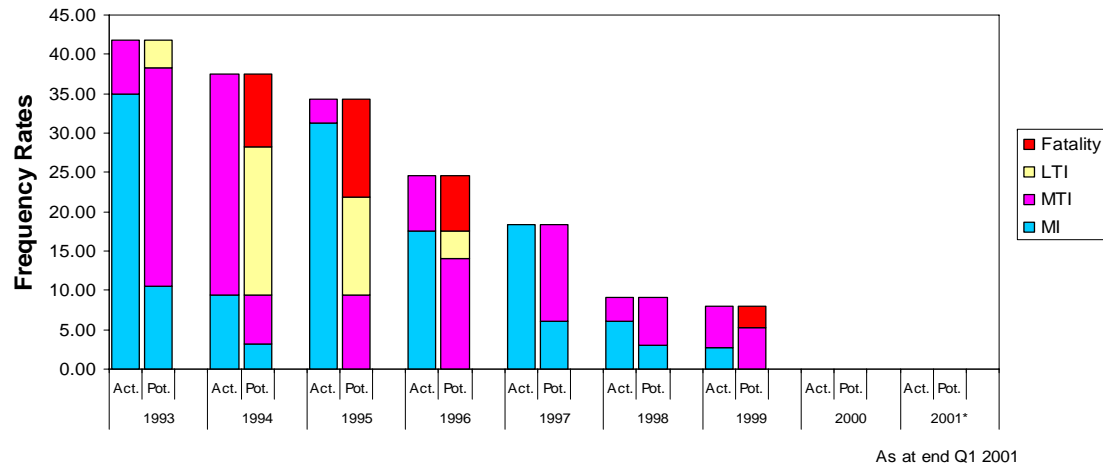
2 Micro...

Risk Ma...

12:45 PM

Rockfall Incidents at Junction

Actual Consequence vs Potential Consequence;
Frequency Rates - January 1993 to March 31 2001



**We are
making
progress !!**